3D computer model.

As an alternative to the processing described above, rather than re-positioning the calibration pattern in the coordinate system in dependence upon the height of the subject object, the 3D computer model of the subject object may be generated relative to a calibration pattern lying in a plane having a predetermined y coordinate of, say, 0.0, and the generated 3D computer model may then be re-positioned in the coordinate system to move it in the negative y-axis direction by one half of the height of the subject object defined in the data received from the customer processing apparatus. This achieves the same result of ensuring that the viewing axis of the default camera intersects the approximate centre of the 3D computer model.

Alternatively, the 3D computer model of the subject object may be generated relative to a calibration pattern lying in a plane having a predetermined y coordinate of, say, 0.0 but with an offset in the y coordinate of each polygon vertex in the 3D computer model equal to minus one half of the height of the subject object defined in the data received from the customer processing. In this way, the 3D computer model is not generated and then

subsequently re-positioned, but is generated in the desired position relative to the default viewing camera straight away by incorporating the off-set into the y coordinate of each polygon of the model when it is generated.

Fifth Embodiment

A fifth embodiment of the present invention will now be described.

The components of the fifth embodiment and the processing operations performed by the components are the same as those in the first embodiment, with the exception of the processing performed by view parameter calculator 44 at step S4-40.

More particularly, in the fifth embodiment, in the processing at step S4-40, rather than defining a viewing camera in dependence upon the generated three-dimensional computer model (as in the first embodiment) or in dependence upon data from a customer processing apparatus 2, 4 defining the height of the subject object (as in the third embodiment), view parameter calculator 44 generates data defining a perspective camera as in the first

embodiment, but then positions the camera at a predetermined position of (20.0, 0.0, 1.0), with the viewing direction of the camera defined to be parallel to the y-axis in the negative y-axis direction. That is, the z coordinate of the viewing camera position is defined to be one half of the height which has been found in practice to be typical of a subject object 210 placed on the photographic mat for imaging (that is, the typical height has been found to be twice the radius of the calibration pattern on the photographic mat).

In this way, the viewing axis of the virtual viewing camera will still intersect the approximate centre of the 3D computer model of the subject object. This is because the subject object 210 will be substantially centred on the photographic mat relative to the calibration pattern when the initial images are recorded by camera 16 (and hence the centre of the base of the subsequently generated 3D computer model will be approximately at the origin of the modelling coordinate system) and because the height of the virtual viewing camera for the 3D computer model (that is the z coordinate of the camera position) is set to be half of the expected 3D computer model height.